Title: AN INVENTORY MANAGEMENT SYSTEM FOR DETERMINING SUGGESTED PART
OCKING LEVELS FOR A VEHICLE DE
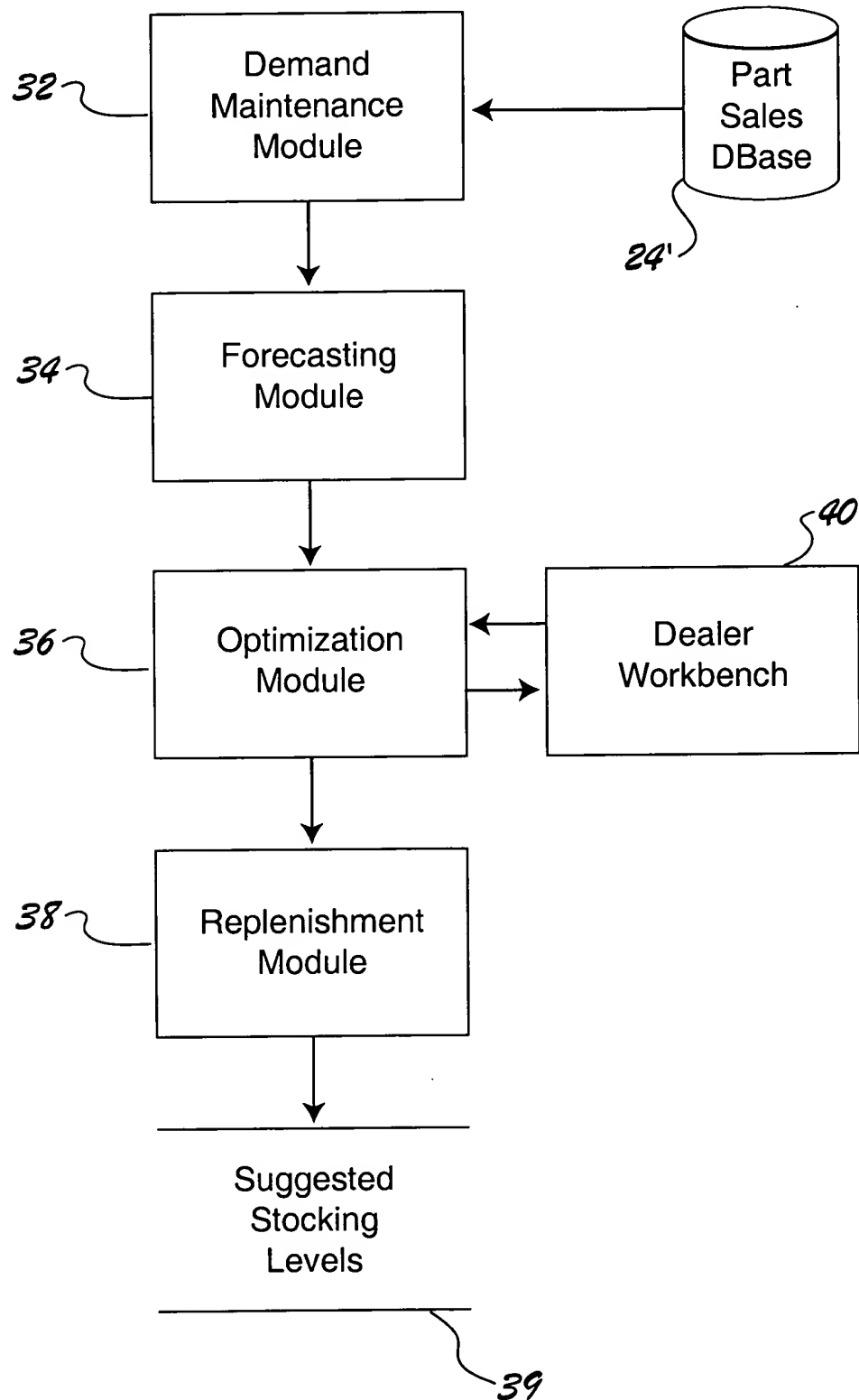Inventor: Ed Williams et al.
Attorney: Timothy D. MacIntyre – Harness, Dickey & Pierce PLC
Atty. Ref.: P705880 (0364T-001455])
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Dealer's Platform

14

Part
Sales
DBase

24'

Inventory
Management
System

20'

Dealer's
Inventory
DBase

22'

<Periodic Updates>

<Periodic Updates>

Centralized Platform

12

Part
Sales
DBase

24

Inventory
Management
System

20

Dealers'
Inventory
DBase

22

FIG. 1

Title: AN INVENTORY MANAGEMENT SYSTEM FOR DETERMINING SUGGESTED PART
●CKING LEVELS FOR A VEHICLE DE●
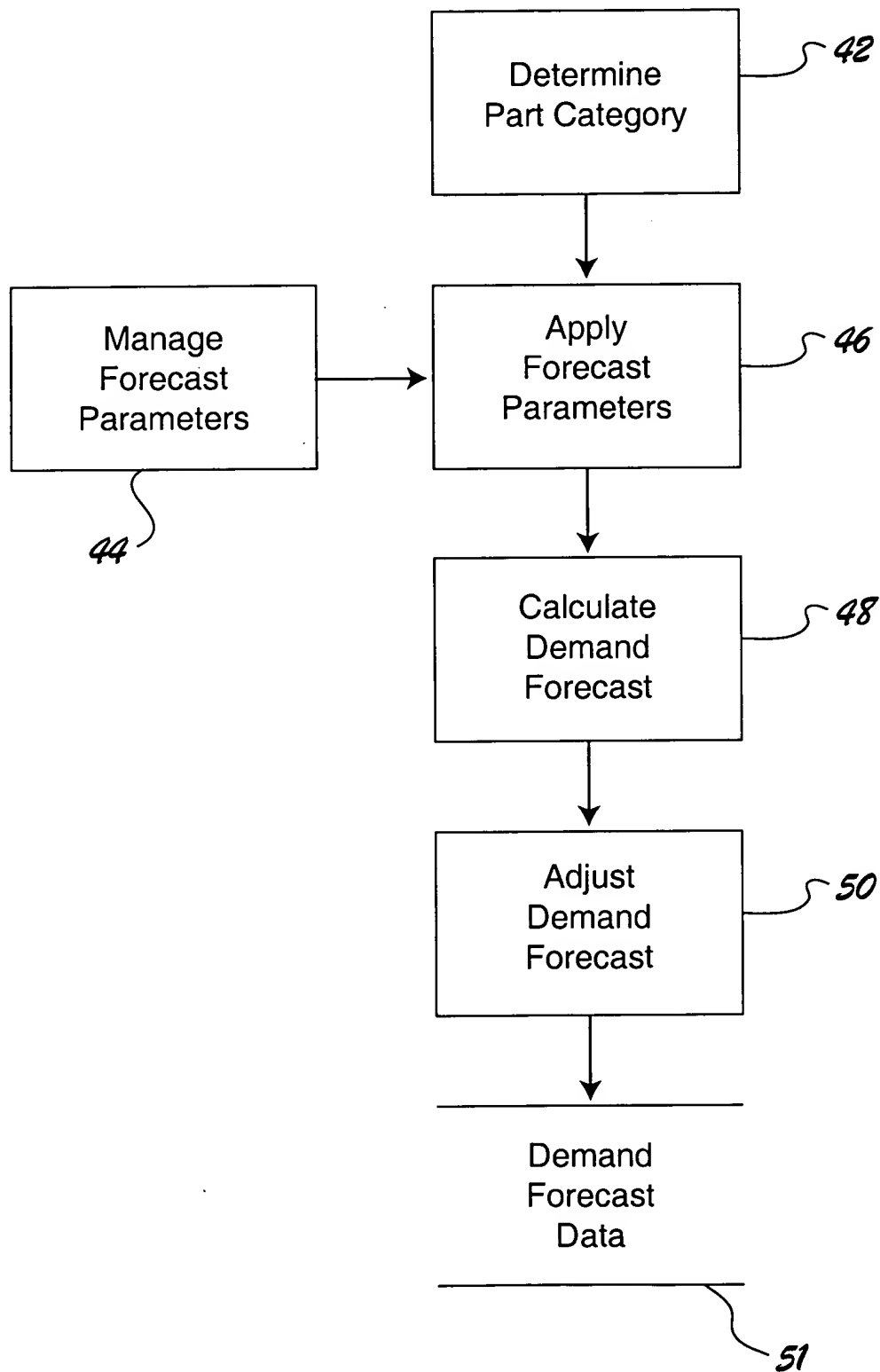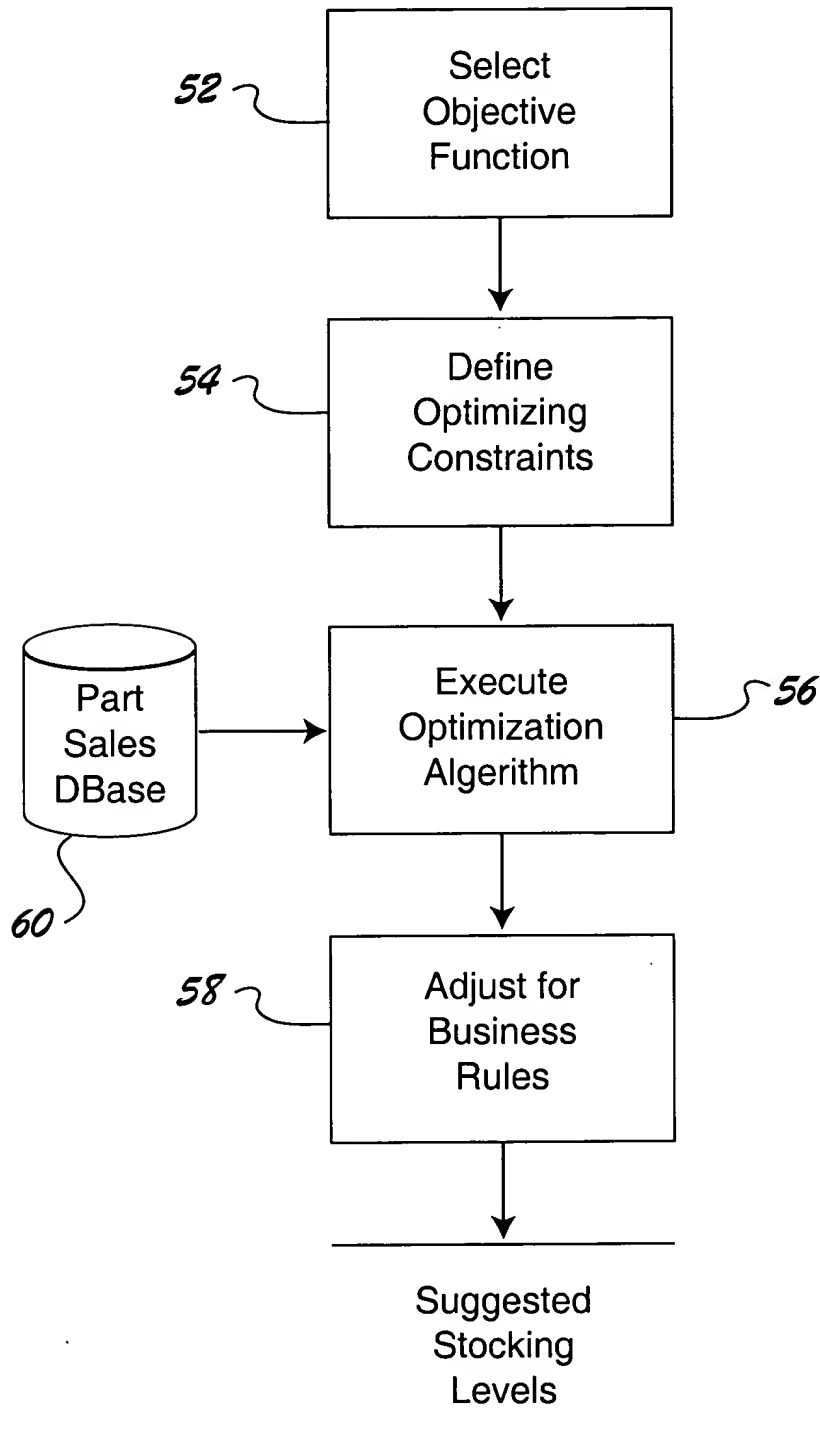Inventor: Ed Williams et al.
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32 ⟶ | Demand Maintenance Module | ← | Part Sales DBase | 24'

↓

34 ⟶ | Forecasting Module |

↓

36 ⟶ | Optimization Module | ⇄ | Dealer Workbench | 40

↓

38 ⟶ | Replenishment Module |

↓

Suggested
Stocking
Levels

39

FIG. 2

Title: AN INVENTORY MANAGEMENT SYSTEM FOR DETERMINING SUGGESTED PART
STOCKING LEVELS FOR A VEHICLE DEALER
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Determine
Part Category — 42

Manage
Forecast
Parameters — 44

Apply
Forecast
Parameters — 46

Calculate
Demand
Forecast — 48

Adjust
Demand
Forecast — 50

Demand
Forecast
Data — 51

FIG. 3

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52 — Select Objective Function

54 — Define Optimizing Constraints

Part Sales DBase → Execute Optimization Algerithm — 56

60

58 — Adjust for Business Rules

Suggested Stocking Levels

FIG. 4

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Objective Function Set-Up Screen

```
PGM: DIOS01          5300    SUGGESTED STOCK ORDER              03/13/2000
SCR: DIOS01          OBJECTIVE FUNCTION SET UP SCREEN              11:06:02
DEALER   38713                INVENTORY DLR TEST         VERSION :

THESE VALUES ARE USED TO SET THE OPTIMUM STOCK LEVELS FED TO THE STOCK ORDER
PROCESS - THIS INFORMATION WILL BE USED EACH WEEK UNTIL CHANGED BY THE USER

OBJECTIVE                TARGET VALUE

  INVESTMENT TARGET  _____        (MAXIMIZE FILL RATE FOR THIS INVESTMENT)
  FILL RATE TARGET              %     (MINIMIZE INVESTMENT FOR THIS FILL RATE)


OBJECTIVE FOR NEXT RUN            RESULTS OF LAST RUN
   OBJECTIVE       . MININVEST       EXPECTED INVENTORY :    $45.052
   TARGET VALUE    .  85.0    %      EXPECTED FILL-RATE :    85.0 %
   LAST UPDATE DATE . Mar 10 2000


F1=HELP       F2=SAVE        F3=SUBMENU     F4=CANCEL
                                           F10=EXIT
```

5300

FIG. 5A

Dealer Optimization Summary

```
JOB:  12345              MOPAR 5300                DATE: 2000/03/27
PGM:  DIOO100R     DEALER OPTIMIZATION SUMMARY REPORT   TIME: 10:44:36
RPT:  S53DSUM           WEEK OF 03/12/2000          PAGE: 001 OF 001
FORM:

DEALER:   XXXXX TEST DEALER INC

CURRENT INVENTORY INVESTMENT  $   211824
CURRENT NUMBER OF PARTS            3555.
```

                                                              STOCK ORDER

		MOPAR DEFAULT FILL = 85.0%	DLR TARGET	DLR TARGET W/ MIN/MAX	DLR TARGET W/ MIN/MAX W/ CURR INV
PRODUCTION SCENARIO					
OBJECTIVE	MININVEST	**66**		**70**	**72**
TARGET VALUE	90.0 %				
OVERALL EXPECTED FILL-RATE		85.0%	90.0%	90.0%	90.0%
EXPECTED INVENTORY INVESTMENT		$ 132756	$ 155097	$ 167645	$ 185645
EXPECTED NUMBER OF PARTS		1585	1797	1967	2297
EXCLUDED PROMOTIONAL INVENTORY INVESTMENT					$ 8345

64

68

5300
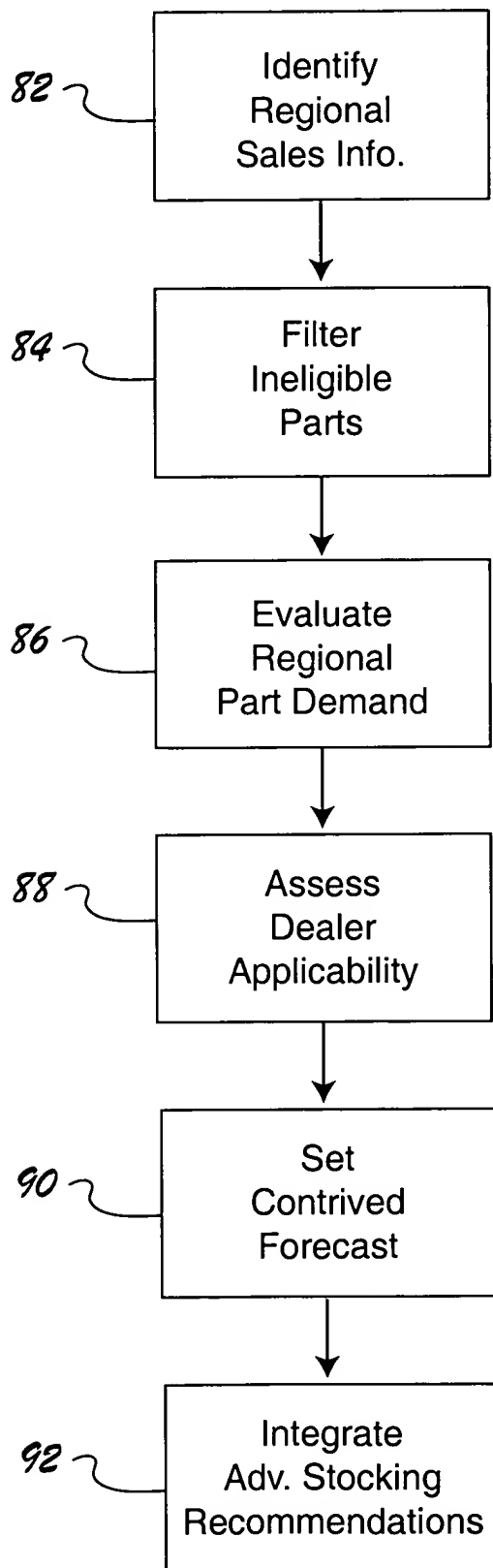
FIG. 5B

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82 — Identify Regional Sales Info.

84 — Filter Ineligible Parts

86 — Evaluate Regional Part Demand

88 — Assess Dealer Applicability

90 — Set Contrived Forecast

92 — Integrate Adv. Stocking Recommendations

FIG. 6